

## 03050105-090

### (Broad River)

#### General Description

Watershed 03050105-090 is located in Cherokee and York Counties and consists primarily of the **Broad River** and its tributaries from the North Carolina border to the Pacolet River. The watershed occupies 82,800 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Cecil-Wilkes-Goldston-Badin series. The erodibility of the soil (K) averages 0.28, and the slope of the terrain averages 12%, with a range of 2-45%. Land use/land cover in the watershed includes: 67.8% forested land, 18.8% agricultural land, 5.0% scrub/shrub land, 4.5% urban land, 2.8% water, and 1.1% barren land.

After the river crosses the state line, it accepts drainage from Ross Creek (Sarratt Creek), Mikes Creek, the Bowens River (Wylies Creek), the Buffalo Creek Watershed, and the Cherokee Creek Watershed. Further downstream, Peoples Creek (Furnace Creek, Toms Branch) drains into the river near the City of Gaffney. Doolittle Creek enters the river next, near the Town of Blacksburg, followed by London Creek (Lake Cherokee, Little London Creek), Bear Creek, McKowns Creek, Dry Branch, the Kings Creek Watershed, and Quinton Branch. Mud Creek enters the river next, downstream of Mud Island, followed by Guyonmbore Creek, Mountain Branch, Abingdon Creek (Wolf Branch, Service Branch, Jenkins Branch), the Thicketty Creek Watershed, Beaverdam Creek (McDaniel Branch), the Bullock Creek Watershed, and Dry Creek (Nelson Creek).

There are numerous ponds and lakes (totaling 245.6 acres) in this watershed and 133.0 stream miles, all classified FW. A fifteen mile segment of the Broad River, extending from Ninety Nine Islands Dam to the river's confluence with the Pacolet River is designated as a South Carolina State Scenic River in recognition of it's outstanding natural resources.

#### Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
B-789	BIO	FW	ROSS CREEK AT SR 577
B-788	BIO	FW	BOWENS RIVER AT SR 83
B-042	P	FW	BROAD RIVER AT SC 18, 4 MI NE GAFFNEY
B-088	S	FW	CANOE CREEK AT S-11-245, 2 MI W OF BLACKSBURG
B-211	S	FW	PEOPLES CREEK AT UNIMPROVED ROAD, 2.3 MI E OF GAFFNEY
B-100	S	FW	FURNACE CREEK AT S-11-50, 6 MI E OF GAFFNEY
B-323	S	FW	DOOLITTLE CREEK AT S-11-100, 1.25 MI SE OF BLACKSBURG
B-343	W	FW	LAKE CHEROKEE IN FOREBAY NEAR DAM
B-330	S	FW	GUYONMOORE CREEK AT S-46-233
B-044	P	FW	BROAD RIVER AT SC 211, 12 MI SE OF GAFFNEY

**Broad River** – There are two monitoring sites along this section of the Broad River. Aquatic life uses are fully supported at both sites (**B-042, B-044**); however, there is a significant increasing trend in turbidity. Significant increasing trends in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration at both sites suggest improving conditions for these parameters. At the upstream site (B-042), a very high concentration of chromium

was measured in 1996. At the downstream site (B-044), a very high concentration of zinc was measured in 1995. In sediments, P,P'DDT, and P,P'DDE and P,P'DDD, both metabolites of DDT, were detected in the 1999 sample. Although the use of DDT was banned in 1973, it is very persistent in the environment.

Recreational uses are not supported at either site due to fecal coliform bacteria excursions.

**Ross Creek (B-789)** - Aquatic life uses are fully supported based on macroinvertebrate community data.

**Bowens River (B-788)** - Aquatic life uses are fully supported based on macroinvertebrate community data.

**Canoe Creek (B-088)** - Aquatic life uses are partially supported due to dissolved oxygen excursions. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

**Peoples Creek (B-211)** - Aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentrations suggests improving conditions for this parameter.

**Furnace Creek (B-100)** - Aquatic life uses are fully supported. P,P'DDT was detected in the 1998 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentrations, and turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentrations suggests improving conditions for this parameter.

**Doolittle Creek (B-323)** - Aquatic life uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and pH. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentrations.

**Lake Cherokee (B-343)** - Lake Cherokee is a 45-acre impoundment at the headwaters of London Creek in Cherokee County, with a maximum depth of approximately 32 feet (9.8 meters) and an average depth of 11 feet (3.4 meters). Lake Cherokee's watershed comprises approximately 0.2 square miles (0.4 km<sup>2</sup>). In an effort to provide access for boating and fishing, the lake was stocked with triploid grass carp in 1985, 1987 and 1991; and aquatic herbicides were applied in 1989, 1991, and 1995. More recent efforts to clear access for boating and fishing included stocking grass carp and applying aquatic herbicide in 2001. Aquatic life and recreational uses are fully supported.

**Guyonmoore Creek (B-330)**– Aquatic life uses are fully supported. In sediments, a very high concentration of chromium was measured in the 1999 sample and di-n-butylphthalate was detected in the 1996 sample. Recreational uses are partially supported due to fecal coliform bacteria excursions.

## NPDES Program

### Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME PERMITTED FLOW @ PIPE (MGD) COMMENT</i>	<i>NPDES# TYPE LIMITATION</i>
BROAD RIVER SC DISTRIBUTORS INC. PIPE #: 001 FLOW: 0.04	SC0002755 MINOR DOMESTIC EFFLUENT
BROAD RIVER MILLIKEN & CO./MAGNOLIA PLT PIPE #: 001 FLOW: 3.10 (PHASE I) PIPE #: 001 FLOW: 3.89 (PHASE II)	SC0003182 MAJOR INDUSTRIAL EFFLUENT EFFLUENT
BROAD RIVER CHAMPION PRODUCTS PIPE #: 001 FLOW: 2.0	SC0035947 MAJOR INDUSTRIAL EFFLUENT
BROAD RIVER CITY OF GAFFNEY/PEOPLES CREEK PLT PIPE #: 001 FLOW: 4.0 WQL FOR DO	SC0047091 MAJOR DOMESTIC WATER QUALITY
BROAD RIVER TOWN OF BLACKSBURG/CANOE CREEK PLT PIPE #: 001 FLOW: 0.68 (PROPOSED) WQL FOR DO,TRC,NH3N	SC0047457 MINOR DOMESTIC WATER QUALITY
PEOPLES CREEK COLONIAL PIPELINE PIPE #: 001 FLOW: M/R	SCG830024 MINOR INDUSTRIAL EFFLUENT
PEOPLES CREEK HAMRICK MILLS PIPE #: 001 FLOW: M/R	SCG250167 MINOR INDUSTRIAL EFFLUENT

## Nonpoint Source Management Program

### Land Disposal Activities

#### Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
CITY OF GAFFNEY LANDFILL DOMESTIC	DWP-918; DWP-908 CLOSED
CITY OF GAFFNEY C/C LANDFILL DOMESTIC	CWP-022 (111002-1201) -----

CHEROKEE COUNTY LANDFILL INDUSTRIAL	111001-6001 (SCD001411040) CLOSED
BLACKSBURG DUMP-METROMONT -----	----- CLOSED
CHEROKEE RECYCLING CENTER -----	111001-5101 -----
DUKE POWER BURIAL SITE INDUSTRIAL	IWP-142 -----

### Land Application Sites

#### ***LAND APPLICATION SYSTEM FACILITY NAME***

#### ***ND# TYPE***

SPRAYFIELD PEELER RUG COMPANY	ND0070980 INDUSTRIAL
SPRAYFIELD SCREEN PRINTERS	ND0069451 INDUSTRIAL

### Mining Activities

#### ***MINING COMPANY MINE NAME***

#### ***PERMIT # MINERAL***

RANDOLPH BROAD RIVER PLANT BROAD RIVER PLANT	0042-21 SAND
THOMAS SAND CO. BLACKSBURG PLANT	0869-21 SAND
RAY BROWN ENTERPRIZES BROWN #3 SAND MINE	1070-21 SAND

### Water Supply

#### ***WATER USER STREAM***

#### ***TOTAL PUMP. CAPACITY (MGD) RATED PUMP. CAPACITY (MGD)***

CITY OF GAFFNEY BPW	18.0
BROAD RIVER	12.0

### Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Town of Blacksburg and the City of Gaffney. The City of Gaffney is planning for new subdivision growth by considering new regional treatment facilities near the Cherokee Creek-Broad River area. Major growth is expected along the I-85 corridor, particularly in the area north of Gaffney. The potential for industrial growth exists along S.C. Hwy. 329 east of Gaffney due to an existing industrial park. Duke Power is planning to build a natural gas-fired power plant in 03050105-120, which should provide some growth to the area. Duke Power will buy water from the nearby Town of Blacksburg. The facility should be open by summer 2003.

## **Watershed Protection and Restoration Strategies**

### ***Special Projects***

#### **Grazing Land Watershed Protection and Enhancement Through Demonstration and Education**

Of the 21,500 farms in South Carolina, 12,000 are involved in the production of beef cattle. Water quality impacts from cattle grazing include the addition of fecal coliform and nutrient enrichment from animal wastes, sedimentation, and riparian zone degradation. The objective of this project, funded by a USEPA Section 319 grant of the Clean Water Act and implemented by Clemson University, is to develop demonstration sites and provide demonstration workshops and written material to cattlemen on the BMP's necessary to protect and enhance the water quality of streams and ponds on grazing lands.

One demonstration site is located in this watershed on the Broad River below 99 Island. The demonstration will show how to exclude cattle from the Broad River, construct creek access ramps, and provide watering stations away from the river. The preference of cattle for using stream water or clean well water will also be evaluated. If clean well water is preferred, it would be a good alternative to fencing animals away from waterways. A ram pump will also be demonstrated along with techniques in rotational grazing.